REPORT OF A CASE OF ABDOMINAL ANEURISM TREATED BY WIRING.*

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The cure of aneurism affecting the larger blood vessels of the body is a question that has given much concern to medical men for many years. In attempting to formulate a rational treatment for this serious condition, surgeons have been particularly active, and by some it is classified as a distinctly surgical disease. A study of the literature, however, is not very encouraging, and, in the light of our present knowledge, it must be confessed that the rational treatment of this malady, either surgical or medical, has by no means been attained.

It is the purpose of this paper to place on record one case of aneurism of the abdominal aorta, treated by the insertion of a wire through which a galvanic current was passed after the wire had been introduced. At the same time attention is called to the previous similar operations, which, as collected from the literature, are twenty in number. A critical analysis of these twenty-one cases brings out several facts from which important conclusions may be deduced.

The case which I wish to report was a negro, 32 years of age, whose occupation was that of a Pullman car porter. He was referred to the surgical service of Dr. Geo. B. Johnston from the practice of Dr. E. A. Truman, Richmond, Va. The patient had enjoyed perfect health until June, 1907, and denied all history of lues. At that time he began to suffer with occasional attacks of diarrhœa, which have persisted up to the present time in spite of treatment. He now has from five to ten stools a day, which are watery, offensive, contain a slight amount of mucus and blood, but there is no tenesmus. Three months ago he began to suffer with severe pain in the region of the umbilicus, with frequent colicky exacerbations. This lasted for nearly a month but has not since returned. Following this he noted considerable throbbing in the abdomen. Physical examination showed a distinctly emaciated patient who was moderately anemic. The heart and lungs were clear throughout on percussion and auscultation. In the abdomen there was a visible prominence in the right hypochondrium. On palpation over this area there was a long rough systolic thrill, which on auscultation gave rise to a bruit that was so loud as to almost hurt the ears. The tumor appeared to be the size of a small cocoanut and was situated just above and to the right of the navel. There was very marked expansile pulsation. A distinct diastolic shock could be made out in addition to the systolic bruit. The abdomen was elsewhere negative. Both femoral pulses were distinctly felt and were synchronous in time. An examination of a specimen of the fresh stool showed that it was liquid with small yellow masses like milk curds and two small particles of dark red coagulated blood with a slight amount of mucus. Microscopical examination was negative for amebae and other parasites.

Patient was operated upon March 28, 1908, under ether anesthesia by the drop method. A median incision was made and exposed the tumor, which appeared to arise from the aorta just below the celiac axis. The tumor was distinctly sacculated and came off on the right side of the orta. A needle, covered with lacquer, was inserted into the sac with its point away from the aorta and through this eleven feet of silver wire was fed to form a coil. Following this the electric current was passed as follows:

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10 milliamperes for 20 minutes.
20 milliamperes for 10 minutes.
30 milliamperes for 10 minutes.
40 milliamperes for about 5 minutes.

When this had been raised to 40 milliamperes the patient's condition suddenly changed, the pulse went up to 140 and it was necessary to give artificial respiration for several minutes. He gradually reacted, however, and the needle was removed without hemorrhage and the patient was put back to bed. Recovery was without incident.

The notes of a physical examination three weeks after operation showed, as we thought, a tumor of distinctly smaller size with less marked pulsation, and patient stated that the pain was very much less. One month after operation he left the hospital and two weeks after this he walked sixteen squares to present himself to the clinic. At this time he complained that the diarrhea from which he suffered previous to operation was again giving him trouble. On account of this he was unable to go back to his work as Pullman car porter, but took up a lighter occupation. Three months after operation the diarrhoea increased in severity and he had repeated hemorrhage from the bowels and died forty-eight hours after the bleeding commenced. It was impossible to obtain a complete autopsy or to get the relatives to consent to our removing the tumor. A partial autopsy, made through an incision at the site of the original wound, showed the abdominal cavity entirely clean and free from any evidence of either hemorrhage or infection, and we believe that the sac ruptured into the bowel. On palpating the sac the coils of wire could be very distinctly felt through the thin walls and there was absolutely no evidence of any clot formation. Although before death we were satisfied that the tumor was reduced in size and that there was less pulsation, still at the autopsy there was no evidence to support such a view. The wall of the sac could be easily compressed between the fingers and would evidently have collapsed were it not for the framework of wire.

The first attempt to cure an aneurism by the insertion of a wire was made in 1864 by Dr. Moore of the Middlesex Hospital. He inserted seventy-eight feet of wire into a thoracic aneurism on the theory that the first indispensable condition for the cure of aneurism is to provide a means of eliciting fibrin from the blood, and a second like condition is to extend the surface within the sac on which the fibrin may be deposited. This method was not applied in the case of an abdominal aneurism until twenty years later, when Loreta, in 1884, introduced six feet of fine wire through a trochar. In this case there appears to have been an almost instant relief of symptoms and a progressive improvement for ten weeks succeeding operation. Thirteen weeks after the sac was wired, however, the patient suddenly died from rupture of the aorta into the abdominal cavity.

A distinct improvement over the early methods was the suggestion by Corradi of passing a galvanic current through the wire after it had been introduced. This was first applied by Corradi himself in the case of a large aneurism of the ascending aorta, April, 1879. It was not until 1892, however, that the Moore-Corradi method was employed for the cure of abdominal aneurism. This operation was performed by Stewart of Philadelphia.

SUMMARY.

For the reason that aneurism of the abdominal aorta has proved absolutely incurable by internal medication, it may be regarded as one of those conditions in which a wide range of experimentation and trial methods is justified. Much has been hoped for in the Moore-Corradi method of treatment by wiring and electrolysis. Notwithstanding the fact that a technic of this operation has been perfected through most elaborate and painstaking studies and experiments, it would seem that those cases of aneurism of the abdominal aorta in which it has been applied have terminated in disappointment to the operator.

A critical study of the twenty-one cases thus for reported inevitably leads to the conclusion that surgery so far offers no certain relief for this malady. Of these twenty-one cases, the subsequent history of three is not recorded; in the remaining eighteen, death ensued in every case. The duration of life after operation in this series varied from one hour to nine months with an average duration of less than fifty days. Who knows that the length of life may not have been shortened instead of prolonged by this method of treatment? The operative technic that has developed for this condition would seem to be absolutely perfect and based upon sound surgical principles, but the fact remains that this method of treatment is disappointing and the last word has not yet been said concerning the surgical treatment of abdominal aneurism.

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